Regents Practice
The Electron-Volt

1. A helium ion with +2 elementary charges is accelerated by a potential difference of 5.0×10^3 volts. What is the kinetic energy acquired by the ion?
   (A) 32×10^{-19} eV
   (B) 2.0 eV
   (C) 5.0×10^3 eV
   (D) 1.0×10^4 eV

2. An elementary charge is accelerated by a potential difference of 9.0 volts. The total energy acquired by the charge is
   (A) 9.0 eV
   (B) 12 eV
   (C) 3.0 eV
   (D) 27 eV

3. How much work is done in moving 6 electrons through a potential difference of 2.0 volts?
   (A) 6.0 eV
   (B) 2.0 eV
   (C) 3.0 eV
   (D) 12 eV

4. If a 1.5-volt cell is to be completely recharged, each electron must be supplied with a minimum energy of
   (A) 1.5 eV
   (B) 1.5 J
   (C) 9.5×10^{18} eV
   (D) 9.5×10^{18} J

5. An electron is accelerated from rest through a potential difference of 200. volts. The work done on the electron is
   (A) 8.00×10^{-3} eV
   (B) 3.20×10^{-17} eV
   (C) 320. eV
   (D) 200. eV

6. How much energy is needed to move one electron through a potential difference of 1.0×10^2 volts?
   (A) 1.0 J
   (B) 1.0×10^2 J
   (C) 1.6×10^{-19} J
   (D) 1.6×10^{-17}J

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Answer Key
[New Exam]

1. D
2. A
3. D
4. A
5. D
6. D